Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) 1. An algebraic codebook method for distributions of P signed pulses on N positions in speech encoding, comprising:

(a) indexing all distributions of P signed pulses on N positions by ordering said distributions in terms of numbers of distributions of Q pulses on M positions for Q less than P, M less than or equal to N, and without regard to the sign of any pulses at the Mth position, where P, N, Q, and M are non-negative integers; and

(b) using said indexing to provide an index to encode an excitation for an input speech frame with said excitation including a distributrion of P signed pulses on N positions.

Claim 2 (original) The method of claim 1 wherein:

(a) each of said N positions containing at least one of said P pulses corresponds to said numbers of distributions of Q pulses on M positions for a single value of Q.

Claim 3 (currently amended) An algebraic codebook method for distributions of P signed pulses on N positions in speech encoding, comprising:

(a) providing an excitation for an input speech frame with said excitation including a distributrion of P signed pulses on N positions; and

(b) computing a codebook index for ~~a~~ said distribution of P signed pulses on N positions by summing a pulse index for each non-overlapping pulse with each said pulse index a sum of terms $XK(M,Q)$ where X is a multiplier equal to 0, 1, or 2 and $K(M,Q)$ is the numbers of distributions of Q signed pulses on M positions

without regard to the sign of any pulses at the Mth position, where P, N, Q, and M are non-negative integers; and

(c) using said codebook index as part of an encoding of said speech frame.

Claim 4 (currently amended) An algebraic codebook method for distributions of P signed pulses on N positions in speech decoding, comprising:

(a) providing an input encoded frame of speech with encoded excitation including a codebook index I_{CB} where I_{CB} is a sum of one or more pulse indexes with each pulse index corresponding to a position occupied by one or more pulses of a distribution of P signed pulses on N positions, wherein each pulse index is a sum with respect to M of one or more terms $XK(M,Q)$ where X is a multiplier equal to 0, 1, or 2 and $K(M,Q)$ is the number of distributions of Q signed pulses on M positions without regard to the sign of any pulses at the Mth position, and wherein P, N, Q, and M are non-negative integers;

(b) computing a distribution of P signed pulses on N positions from said codebook index I_{CB} by successively extracting each of said pulse indexes from I_{CB} where a pulse index is computed by accumulating $XK(M,Q)$ for M decreasing from a location determined by the extraction of the immediately prior pulse index, said accumulating continuing until equaling or exceeding I_{CB} minus the prior extracted pulse indexes; and

(c) using said distribution of P signed pulses as part of an excitation in synthesizing a speech frame corresponding to said input frame.